Listing of the Claims:

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please cancel claims 5, 6, 7, 15, 16, 17, 25, 26, and 27, without prejudice.

Listing of Claims:

1. (currently amended) A method to control access to logical volumes disposed in an information storage and retrieval system using parallel access volumes, comprising the steps of:

providing an information storage and retrieval system comprising a plurality of logical volumes;

providing a plurality of host computers, wherein each of said plurality of host computers is capable of communicating with said information storage and retrieval system;

forming (N) host computer groups, wherein (N) is greater than or equal to 1;

assigning each host computer to the a host computer group;

forming (N) logical volume groups;

assigning one or more of said plurality of logical volumes to a logical volume group;

creating a parallel access volume having an alias;

persistently associating said parallel access volume with ~~an original~~ a base logical volume, wherein said ~~original~~ base logical volume is assigned to the (i)th logical volume group, wherein (i) is greater than or equal to 1 and less than or equal to (N);

~~determining the current base logical volume associated with said parallel access~~ ~~volume;~~

~~operative if said current base logical volume is said original base logical volume,~~ ~~permitting each of said one or more host computers assigned to the (i)th host computer group to~~ ~~access said original base logical volume;~~

~~operative if said current base logical volume is not said original base logical volume,~~ ~~permitting each of said one or more host computers assigned to the (i)th host computer group to~~ ~~access said current base logical volume~~

<u>permitting each host computer assigned to the (i)th host computer group to access said</u> <u>parallel access volume.</u>

2. (currently amended) The method of claim 1, further comprising the steps of:

requesting by one of said plurality of host computers to access a designated logical volume;

determining that said requesting host computer is assigned to the (j)th host computer group, wherein (j) is greater than or equal to 1 and less than or equal to (N);

determining if said designated logical volume is a parallel access volume;

operative if said designated logical volume is a parallel access volume, determining the ~~current~~ base logical volume associated with said parallel access volume;

determining if said ~~current~~ base logical volume is assigned to the (j)th logical volume group;

operative if said ~~current~~ base logical volume is assigned to the (j)th logical volume group, permitting said requesting host <u>computer</u> to access said current base logical volume;

operative if said ~~current~~ base logical volume is not assigned to the (j)th logical volume group, disallowing said requesting host <u>computer</u> from accessing said ~~current~~ base logical

volume.

3. (original) The method of claim 1, further comprising the steps of:

receiving a request to reassign said alias to a different one of said plurality of logical

volumes;

determining if said different logical volume and said original base logical volume are

assigned to the same logical volume group;

operative if said different logical volume and said original base logical volume are

assigned to the same logical volume group, reassigning said alias to said different base logical

volume;

operative if said different logical volume and said original base logical volume are not

assigned to the same logical volume group, denying the request to assign the alias.

4. (original) The method of claim 1, further comprising the steps of:

receiving a request to delete said alias;

deleting said alias

5.   Canceled.

6.   Canceled.

7.   Canceled.

8. (currently amended) The method of claim 1, further comprising the steps of:

receiving a request to assign to a logical volume group the ~~current~~ base logical volume

associated with ~~said~~ a parallel access volume;

determining if the ~~current~~ base logical volume associated with said parallel access

volume differs from the original base logical volume associated with said parallel access

volume;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> does not differ from the original base logical volume associated with said parallel access volume, assigning the ~~current~~ base logical volume <u>associated with said parallel access volume to said logical volume group</u>;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume</u>:

reassigning ~~said~~ <u>the</u> alias <u>for said parallel access volume</u> to said original base logical volume; and

assigning <u>to said logical volume group</u> said ~~current~~ base logical volume <u>associated with said parallel access volume</u>.

9. (currently amended) The method of claim 1, further comprising the steps of:

receiving a request to unassign <u>from a logical volume group</u> the ~~current~~ base logical volume associated with ~~said~~ <u>a</u> parallel access volume;

determining if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume</u>;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> does not differ from the original base logical volume <u>associated with said parallel access volume</u>, unassigning <u>from said logical volume group said</u> ~~the current~~ base logical volume <u>associated with said parallel access volume</u>;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u>

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differs from the original base logical volume associated with said parallel access volume:

reassigning ~~said~~ the alias associated with said parallel access volume to said original base logical volume associated with said parallel access volume;

unassigning from said logical volume group the ~~current~~ base logical volume associated with said parallel access volume.

10. (currently amended) The method of claim 1, further comprising the steps of:

receiving a request to delete the ~~current~~ base logical volume associated with a parallel access volume;

determining if the ~~current~~ base logical volume associated with said parallel access volume differs from the original base logical volume associated with said parallel access volume;

operative if the ~~current~~ base logical volume associated with said parallel access volume does not differ from the original base logical volume associated with said parallel access volume, deleting the ~~current~~ base logical volume associated with said parallel access volume;

operative if the ~~current~~ base logical volume associated with said parallel access volume differs from the original base logical volume:

reassigning said alias associated with said parallel access volume to said original base logical volume associated with said parallel access volume;

deleting the ~~current~~ base logical volume associated with said parallel access volume.

11. (currently amended) An article of manufacture comprising a computer useable medium having computer readable program code disposed therein to control access to logical volumes disposed in an information storage and retrieval system using parallel access volumes,

wherein said information storage and retrieval system comprises a plurality of logical volumes, and wherein a plurality of host computers are capable of communicating with said information storage and retrieval system, and wherein one or more of said logical volumes are assigned to one of (N) logical volume groups wherein (N) is greater than or equal to 1, and wherein each host computer is assigned to one of (N) host computer groups, the computer readable program code comprising a series of computer readable program steps to effect:

receiving a request from one of said plurality of host computers to access a designated logical volume, wherein said requesting host is assigned to the (j)th host computer group;

determining if said designated logical volume is a parallel access volume comprising an alias;

operative if said designated logical volume is a parallel access volume, determining if the ~~original~~ base logical volume persistently associated with said parallel access volume is assigned to the (j)th logical volume group;

operative if the ~~original~~ base logical volume persistently associated with said parallel access volume is assigned to the (j)th logical volume group, permitting said requesting host computer to access said designated logical volume;

~~operative if said current base logical volume is said original base logical volume, permitting each of said one or more host computers assigned to the (j)th host computer group to access said original base logical volume;~~

~~operative if said current base logical volume is not said original base logical volume, permitting each of said one or more host computers assigned to the (j)th host computer group to access said current base logical volume~~.

12. (original) The article of manufacture of claim 11, wherein a first person owns said requesting host computer, and wherein a second person owns said article of manufacture.

13. (original) The article of manufacture of claim 11, said computer readable program code further comprising a series of computer readable program steps to effect:

receiving a request to reassign said alias to a different one of said plurality of logical volumes;

determining if said different logical volume and said original base logical volume are assigned to the same logical volume group;

operative if said different logical volume and said original base logical volume are assigned to the same logical volume group, reassigning said alias to said different base logical volume;

operative if said different logical volume and said original base logical volume are not assigned to the same logical volume group, denying the request to assign the alias.

14. (original) The article of manufacture of claim 11, said computer readable program code further comprising a series of computer readable program steps to effect:

receiving a request to delete said alias;

deleting said alias.

15. Canceled.

16. Canceled.

17. Canceled.

18. (currently amended) The article of manufacture of claim 11, said computer readable program code further comprising a series of computer readable program steps to effect:

receiving a request to assign to a logical volume group the ~~current~~ base logical volume associated with ~~said~~ a parallel access volume;

determining if the ~~current~~ base logical volume associated with said parallel access volume differs from the original base logical volume associated with said parallel access volume;

operative if the ~~current~~ base logical volume associated with said parallel access volume does not differ from the original base logical volume associated with said parallel access volume, assigning the ~~current~~ base logical volume associated with said parallel access volume to said logical volume group;

operative if the ~~current~~ base logical volume associated with said parallel access volume differs from the original base logical volume associated with said parallel access volume:

reassigning ~~said~~ the alias for said parallel access volume to said original base logical volume; and

assigning to said logical volume group said ~~current~~ base logical volume associated with said parallel access volume.

19. (currently amended) The article of manufacture of claim 11, said computer readable program code further comprising a series of computer readable program steps to effect:

receiving a request to unassign from a logical volume group the ~~current~~ base logical volume associated with ~~said~~ a parallel access volume;

determining if the ~~current~~ base logical volume associated with said parallel access volume differs from the original base logical volume associated with said parallel access

volume;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> does not differ from the original base logical volume <u>associated with said parallel access volume</u>, unassigning <u>from said logical volume group said</u> ~~the current~~ base logical volume <u>associated with said parallel access volume</u>;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume</u>:

reassigning ~~said~~ the <u>alias associated with said parallel access volume</u> to said original base logical volume <u>associated with said parallel access volume</u>;

unassigning <u>from said logical volume group</u> the ~~current~~ base logical volume <u>associated with said parallel access volume</u>.

20. (currently amended) The article of manufacture of claim 11, said computer readable program code further comprising a series of computer readable program steps to effect:

receiving a request to delete the ~~current~~ base logical volume <u>associated with a parallel access volume</u>;

determining if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume</u>;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> does not differ from the original base logical volume <u>associated with said parallel access volume</u>, deleting the ~~current~~ base logical volume <u>associated with said parallel access volume</u>;

operative if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume:

reassigning said alias <u>associated with said parallel access volume</u> to said original base logical volume <u>associated with said parallel access volume</u>;

deleting the ~~current~~ base logical volume <u>associated with said parallel access volume</u>.

21. (currently amended) A computer program product usable with a programmable computer processor having computer readable program code embodied therein to control access to logical volumes disposed in an information storage and retrieval system using parallel access volumes, wherein said information storage and retrieval system comprises a plurality of logical volumes, and wherein a plurality of host computers are capable of communicating with said information storage and retrieval system, <u>and wherein one or more of said logical volumes are assigned to one of (N) logical volume groups wherein (N) is greater than or equal to 1, and wherein each host computer is assigned to one of (N) host computer groups,</u> comprising:

computer readable program code which causes said programmable computer processor to receive a request from one of said plurality of host computers to access a designated logical volume, wherein said requesting host is assigned to the (j)th host computer group;

computer readable program code which causes said programmable computer processor to determine if said designated logical volume is a parallel access volume comprising an alias, wherein said parallel access volume is persistently associated with an original base logical volume, and wherein said plurality of logical volumes includes said original base logical volume;

computer readable program code which, if said designated logical volume is a parallel

access volume, causes said programmable computer processor to determine the ~~current~~ base

logical volume ~~for~~ ~~associated with~~ said parallel access volume;

computer readable program code which causes said programmable computer processor

to determine if said ~~current~~ base logical volume is assigned to the (j)th logical volume group;

computer readable program code which, if said ~~current~~ base logical volume is assigned

to the (j)th logical volume group, causes said programmable computer processor to permit said

requesting host <u>computer</u> to access said ~~current~~ base logical volume;

computer readable program code which, if said ~~current~~ base logical volume is not

assigned to the (j)th logical volume group, causes said programmable computer processor to

disallow access <u>by said requesting host computer</u> to said ~~current~~ base logical volume.

22. (original) The computer program product of claim 21, wherein a first person owns

said requesting host computer, and wherein a second person owns said article of manufacture.

23. (currently amended) The computer program product of claim 21, further

comprising:

computer readable program code which causes said programmable computer processor

to receive a request to reassign ~~said~~ <u>an</u> alias <u>associated with a first one of said plurality of</u>

<u>logical volumes</u> to a different one of said plurality of logical volumes;

computer readable program code which causes said programmable computer processor

to determine if said different logical volume and said original base logical volume are assigned

to the same logical volume group;

computer readable program code which, if said different logical volume and said

original base logical volume are assigned to the same logical volume group, causes said

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programmable computer processor to reassign said alias to said different base logical volume;

computer readable program code which, if said different logical volume and said original base logical volume are not assigned to the same logical volume group, causes said programmable computer processor to deny the request to assign the alias.

24. (original) The computer program product of claim 21, further comprising:

computer readable program code which causes said programmable computer processor to receive a request to delete said alias;

computer readable program code which causes said programmable computer processor to delete said alias.

25.   Canceled.

26.   Canceled.

27.   Canceled.

28. (currently amended) The computer program product of claim 21, further comprising:

computer readable program code which causes said programmable computer processor to receive a request to assign <u>to a logical volume group</u> the current base logical volume associated with ~~said~~ <u>a</u> parallel access volume;

computer readable program code which causes said programmable computer processor to determine if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume;</u>

computer readable program code which, if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> does not differ from the original base logical volume

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associated with said parallel access volume, causes said programmable computer processor to assign the ~~current~~ base logical volume <u>associated with said parallel access volume to said logical volume group</u>;

computer readable program code which, if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume,</u> causes said programmable computer processor to:

reassign ~~said~~ <u>the</u> alias <u>for said parallel access volume</u> to said original base logical volume; and

assign <u>to said logical volume group</u> said ~~current~~ base logical volume <u>associated with said parallel access volume</u>.

29. (currently amended) The computer program product of claim 21, further comprising:

computer readable program code which causes said programmable computer processor to receive a request to unassign <u>from a logical volume group</u> the current base logical volume associated with ~~said~~ <u>a</u> parallel access volume;

computer readable program code which causes said programmable computer processor to determine if the current base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume</u>;

computer readable program code which, if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> does not differ from the original base logical volume <u>associated with said parallel access volume,</u> causes said programmable computer processor to unassign <u>from said logical volume group said</u> ~~the current~~ base logical volume <u>associated with</u>

said parallel access volume;

computer readable program code which, if the ~~current~~ base logical volume <u>associated</u> <u>with said parallel access volume</u> differs from the original base logical volume <u>associated with</u> <u>said parallel access volume</u>, causes said programmable computer processor to:

reassign ~~said~~ the <u>alias associated with said parallel access volume</u> to said original base logical volume <u>associated with said parallel access volume</u>;

unassigning <u>from said logical volume group</u> the ~~current~~ base logical volume <u>associated</u> <u>with said parallel access volume</u>.

30. (currently amended) The computer program product of claim ~~31~~ <u>21</u>, further comprising:

computer readable program code which causes said programmable computer processor to receive a request to delete the ~~current~~ base logical volume <u>associated with a parallel access</u> <u>volume</u>;

computer readable program code which causes said programmable computer processor to determine if the ~~current~~ base logical volume <u>associated with said parallel access volume</u> differs from the original base logical volume <u>associated with said parallel access volume</u>;

computer readable program code which, if the ~~current~~ base logical volume <u>associated</u> <u>with said parallel access volume</u> does not differ from the original base logical volume <u>associated with said parallel access volume</u>, causes said programmable computer processor to delete the ~~current~~ base logical volume <u>associated with said parallel access volume</u>;

computer readable program code which, if the ~~current~~ base logical volume <u>associated</u> <u>with said parallel access volume</u> differs from the original base logical volume, causes said

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programmable computer processor to:

reassign said alias associated with said parallel access volume to said original base logical volume associated with said parallel access volume;

delete the ~~current~~ base logical volume associated with said parallel access volume.

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